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SUMMARY

A random sample of homemakers in West Virginia was asked a series of questions regarding their attitudes toward uses of fresh apples. Contingency chi-square tests of independence were used to determine whether the responses were dependent on age.

There was no apparent relationship between age and seasonal purchasing habits for apples. Forty-four per cent of the homemakers interviewed indicated that their purchases of apples varied little from month to month. The fall and winter months were equally popular with those respondents who indicated seasonal variation.

Red delicious was the most frequently mentioned variety for eating fresh, although in the 55 years and older category there was a larger than expected response to grimes golden apples. Over a fourth of the respondents were unable to name the variety of apple preferred by their families.

Brand preference for apples was virtually nonexistent. Of those who did indicate they preferred a specific brand of apple, most of the homemakers responded with a variety name when asked which brand they looked for.

In general, a crisp, fine-textured, juicy apple was preferred. There appeared to be a stronger than average preference among the oldest respondents for a soft, mealy, tart apple, although the majority in this group still preferred the crisp, fine-textured, sweet apple.

When asked which fruit they preferred for fresh consumption, homemakers responded with bananas most frequently, followed by apples. Younger families (under 35) preferred bananas over apples by a large margin, while older families (55 or older) preferred apples to bananas.

THE AUTHORS

Robert L. Jack is Agricultural Economist; at the time of this study, Kathleen Brain was a Graduate Research Assistant in Agricultural Economics.

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Fresh Apple Utilization As Related to Age

Robert L. Jack and Kathleen Brain

Per capita consumption of fresh apples[1] in the United States decreased from 74 pounds in 1912 to 15 pounds in 1969. During this period the average annual rate of decline was over one pound per capita. Although recent data indicate a slower rate of decline in per capita consumption, commercial producers are still concerned about the future of the apple market. As a result of this concern the following questions are being asked:

1. What is responsible for the large decrease in per capita consumption?
2. What can be done to reverse this downward trend?

PURPOSE OF THIS STUDY

Little has been published on the socio-economic characteristics of fresh apple consumers. Most previous studies have lacked the detail necessary to provide the industry with guidelines for assessing the causes and for developing a program aimed at reversing the downward trend in per capita consumption.

This study was begun as an exploratory project to identify some needed areas for future research. However, it was found necessary to broaden the scope so that relationships between socio-economic variables (income, age, education, place of residency, and family size) and fresh apple utilization could be explored in more detail. This publication reports the analyses of relationships between age and purchase patterns, utilization, and preferences for fresh apples. The relationship between income and population density and the same variables as above were reported in preceding publications (Bulletin 625 and Bulletin 626).

METHODOLOGY

The 55 counties in West Virginia were divided into three categories on the basis of population density in 1970. Population density A counties were defined as having 20 or fewer inhabitants per square mile; population density C counties, 100 or more; and population density B counties included those with over 20 but less than 100.[2] According to this definition there were 9 density A, 15 density C, and 31 density B counties in the State.

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[1] Fresh apples are those marketed in their natural state and which have undergone no type of processing. This publication deals with fresh apples unless otherwise stated.

To obtain a representative sample, the number of counties surveyed in each of the three categories was proportional to the per cent of State population reported in each of the following classifications. In 1960, 6.5 per cent of the population of West Virginia was considered rural farm, 40.5 per cent urban, and 53 per cent rural non-farm.[3] Accordingly, of the 18 counties randomly selected, three were selected from population density A counties, five from population density C counties, and 10 from population density B counties.

Four starting points were randomly selected in each of population density A and B counties by using a table of random numbers and a county map. Three interviews were completed with homemakers at each starting point in population density A counties, making a total of 12 interviews from each county. In the population density B county classification six interviews were completed at each starting point, making the county total 24 interviews. For population density C, telephone directories for the urban center in each county were used to randomly select three starting points. Twelve homemaker interviews were conducted at each starting point.

The total number of personal interviews with homemakers was 451: 33 in density A counties, 240 in density B counties, and 178 in density C counties, which accounted for 7 per cent, 53 per cent, and 40 per cent of the sample, respectively. These interviews were completed during the months of May and June, 1972.

Normally a rigorous statistical test is not necessary for identifying relationships that would provide profitable areas for future research. Therefore, the chi-square test for independence was used to identify significant relationships. For the purpose of this study, tabulated chi-square values having a probability of .10 or less were considered to be significant.

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[2] U.S. Department of Commerce, Bureau of the Census, **1970 Census of Population: Number of Inhabitants, West Virginia** (Washington: U.S. Government Printing Office, May, 1971), p. 14.

[3] Leonard M. Sizer, **Population Changes in West Virginia With Emphasis 1940-1960,** Agricultural Experiment Station Bulletin 563 (Morgantown: West Virginia University, May, 1968), p. 29.

CHARACTERISTICS OF SAMPLE

Socio-economic variables such as age, education, income, occupation, and family size provide a good basis for comparing respondents living in different population densities. Later in this study, age will be used as the independent variable in assessing the utilization of fresh apples in West Virginia.

The age distribution of homemakers who responded in personal interviews was similar for all three places of residence (Table 1). Of all three residency categories of homemakers interviewed, the smallest percentage was in the less than 25 years and the largest percentage was in the 55 years and over age bracket. A smaller percentage of homemakers in density A and C areas were in the 34 or less age category than for the total sample. For the 55 and over category, the density C area showed a higher proportion than the total sample.

The density B area, which includes suburban areas, had a larger per cent of the population in the lower age brackets. This figure supports the contention that larger proportions of density A and C populations are composed of older people.

Forty-eight per cent of all respondents in the sample reported attendance or graduation from high school as their educational achievement, with very little difference due to place of residence. Only four per cent of the sample had completed some graduate work. The proportion completing some college graduate work by place of residence was six per cent in density C, three per cent in density B, and none in density A areas.

More than 65 per cent of the total sample – 78 per cent of density A, 54 per cent of density B, and 72 per cent of density C – reported annual household incomes of less than $10,000. Eighteen per cent of the sample had incomes over $15,000 annually, while density B category showed 21 per cent; density A, 9 per cent; and density C, 7 per cent. The higher annual income and lower average age for the density B category is consistent with what one would expect. However, the relatively high levels of college education in densities A and C areas were not expected.

ANALYSIS

The appearance of modern transportation, refrigeration, and self-service super markets has been responsible for changes in the market structure of the fresh apple industry. The combined improvement in transportation and refrigeration has influenced competition by increasing the size of the supply area from which high quality fruit can be obtained for a given market. Controlled atmosphere storage has enabled producers to supply high quality apples over a greater part of the year and higher incomes have made it possible for housewives to buy out-of-season fruit for family consumption. However, increased participation of homemakers in the labor force may be related to the decline in fresh apple consumption and the increased consumption of apples in processed forms.

PURCHASES

Of the 450 homemakers in this survey, 406 purchased apples for fresh use during the last year (Table 2). Fresh consumption was defined as consumption of the apple in its natural state, exclusive of any type of home preparation. Age had no influence on whether or not apples had been purchased in the last year.[4]

There was no apparent relationship between age and seasonal purchasing practices for apples (Table 3). Forty-four per cent of the homemakers interviewed indicated they either buy the same amount of apples every month or have no special months when they buy more fresh apples.[5] Of those who indicated seasonal variation, the fall and winter months were mentioned most frequently.

The most important reason for buying apples during a certain group of months was price. Thirty-seven per cent of the respondents who explained why their purchases of apples vary cited decreased price or abundant supply as their reason (Table 4). Other factors mentioned frequently were variations in appetite, holidays, and depletion of homegrown apples.

With respect to the color of apples usually bought, 58 per cent of the homemakers interviewed purchased both yellow and red apples. Thirty-two per cent of the respondents usually buy red apples, while only 10 per cent buy yellow apples (Table 5); there seemed to be no relationship to age.

[4] In Table 2 and all other tables showing the results of chi-square testing the top figure in each response category indicates the actual number of homemakers responding, the middle figure indicates the number of expected responses based on the chi-square test, and the bottom figure is the amount of the total chi-square value accounted for by that cell.

[5] People who did not respond to this question (10) or who purchased larger quantities of apples in the spring (8) were not included in the chi-square test, accounting for the difference in Tables 2 and 3.

The most popular apple variety was red delicious, preferred by 35 per cent of the respondents (Table 6). Rome beauty and grimes golden had a relatively heavy response from the oldest age category. In the under 35 age category yellow delicious received a larger than expected response, and grimes golden was quite unpopular. More than one-fourth of the respondents to this question were unable to name the variety preferred by their families.

Age did not appear related to the place apples are purchased (Table 7). Over half the homemakers interviewed purchased their apples at a supermarket. Also mentioned frequently were produce or fruit markets, neighborhood stores, and fruit farms.

Clear, pastic bags were the most common type of packaging, regardless of age (Table 8). This type of package was purchased by 56 per cent of the respondents. Loose apples, baskets, or boxes also were bought by 37 per cent of the respondents.

After indicating the type of package usually selected in buying apples, the respondents were asked which type package they preferred for convenience. Plastic bags were again mentioned by over half the total sample (Table 9). Loose apples were preferred by more homemakers than those who actually purchased apples that way. It appears that homemakers would like to have more freedom in selecting the quantity and quality of the apples they purchase without having to pay the higher price usually associated with loose apples. The responses were similar for all age categories.

The most important criteria for choosing packaged apples were ease in seeing the product and convenience in handling and storing (Table 10). Less frequently mentioned reasons were adequacy of quantity in the package, economy, good keeping quality, and lack of availability of alternative packaging. These reasons were independent of age.

Ninety-three per cent of the respondents indicated they could usually find apples packaged in the size package preferred (Table 11). There was some indication, however, that people in the 45-54 bracket found available packages too small and people in the 55 and older category found packages too large. Very few suggestions for improving packaging of apples were given, perhaps because most homemakers indicated suitable packaging is available (Table 12).

Ninety-four per cent of the homemakers interviewed indicated they did not look for a specific brand when they bought apples (Table 13). Many of the remaining six per cent responded with an apple variety instead of a brand name.

PREFERENCES

A series of apple characteristics including firmness, juiciness, sweetness, texture, color, and size, were listed and the respondent was querried as to the characteristics preferred. In general a crisp, juicy, fine-textured apple was preferred, although for all characteristics except size there was a significant difference in preferred charactertistics by age. Respondents in the 55 and older category exhibited a preference for a soft, dry, mealy apple (Tables 14, 15, 16). These characteristics are generally associated with apples which have received regular as opposed to controlled atmosphere storage over the winter. Controlled atmosphere storage is a relatively new technique and older people may be reluctant to change their tastes and preferences. Another possibility is that general health and dental problems may make these characteristics more appealing to people in the older age categories.

Sweet apples were generally preferred over tart apples (Table 17). Respondents in the 25-34 year category had a larger response to sweet apples than would be expected by chance alone, while the 55 years and older category showed an inclination for tart apples.

Bright or deep red apples and apples that are more yellow than red were the preferred colors by the majority of the homemakers interviewed (Table 18). Age did influence color preference, with lower than expected response of people 55 and older favoring bright or deep red apples. Response of homemakers in the 45-54 age category was rather low for the more yellow than red group.

A medium-sized apple was preferred by the majority of the respondents (Table 19). Age was not related to preferred apple size.

Age did appear to influence the preferred apple variety. There was a tendency among the youngest respondents and those 35-44 years old to be unaware of the variety associated with the characteristics they preferred (Table 20). The 25-34 category showed a preference for red and yellow delicious, while the 55 and older age group preferred grimes golden and staymen, winesap apples. Approximately one-fifth of the homemakers interviewed could not name the variety which fit the characteristics they described.

In a series of questions, respondents were asked which one of seven fresh fruits they would serve for various situations presented. In general, apples were the most frequent choice, leading all other fruits listed in 8 of 11 situations. Bananas were next in popularity, being the second most frequent choice in seven situations. Contingency chi-square tests were performed to test the null hypothesis of independence between fruit chosen and level of income. In order to get meaningful tabular chi-square values, fruits with very few or no responses were excluded from the test.

Grapefruit was by far the most frequently mentioned fruit which respondents would serve for breakfast for all age levels (Table 21). There seemed to be a preference for bananas in the under 35, and 55 and older age groups, however. Apples were mentioned by 22 respondents, which might seem an unusual choice for breakfast. The homemakers who were interviewed were aware that the survey was conducted to gain information concerning fresh apples and that may have biased the responses of some persons.

For lunch, both peaches and apples were popular choices (Table 22). Bananas, pears, and oranges received enough responses to be included in the test. However, they did not equal peaches and apples in popularity. Age did not seem related to choice of fruit for lunch.

Peaches were mentioned most frequently for the evening meal, with apples and pears being slightly less popular (Table 23). No difference in preference by age level was apparent.

Sixty-four per cent of the homemakers interviewed would serve apples for an adult's sack lunch (Table 24). Bananas were mentioned by 23 per cent of the homemakers, with no apparent difference in preference by age level. The pattern for a child's sack lunch was similar with 59 per cent preferring apples and 31 per cent preferring bananas (Table 25).

For all age levels apples received the heaviest response for a children's party and bananas were second in popularity (Table 26). Less popular were grapes and oranges. The pattern was slightly different for a teenager's party (Table 27). Apples again received very good response, but grapes were slightly more popular than bananas. There was also a difference in preference by age, with the younger respondents showing a preference for oranges and those 55 and older preferring peaches.

Homemakers in the under 25 category exhibited a preference for grapes as a fruit for an adult party while those in the 35-44 age group appeared to have a preference for oranges (Table 28). When the seven fruits in Table 28 were used for the chi-square test, there was a significant difference in responses by age level. Twenty-five homemakers indicated they would serve mixed fruit rather than any single fruit listed in the questionnaire. When these responses were included in the test, there was no significant difference in responses at the 0.10 level.

Apples and bananas were favorite choices for a child's snack (Table 29). In the youngest age group bananas received a heavier response than did apples, and in the 25-34 category the two fruits were equally popular. Apples were more a popular selection than bananas for the three older age groups. The response to apples in the 35-44 age level was quite high, causing the cell to make a substantial contribution to the total chi-square value.

Fifty per cent of the homemakers interviewed would serve apples for a teenager's snack (Table 30). Bananas, the next most common fruit, received 21 per cent of the total response. There appeared to be some difference in response by age level, with the 25-34 age group showing a preference for pears and oranges.

Age did not influence the fruit preference for an adult's snack (Table 31). Apples were the most frequent response, and bananas were second with about half as many responses. Less popular were peaches and oranges.

Age did not appear to influence attitudes concerning the nutritional value of processed apples as opposed to fresh apples (Table 32). Seventy-eight per cent of the homemakers interviewed ranked fresh apples higher than processed apples in this respect. Twenty-two per cent felt there was no difference in nutritional value. The number of people who thought of processed apples as being more nutritious than fresh apples was so small that this category was excluded from the statistical test.

A series of characteristics for apples was listed and the respondents were asked which apple was superior—a red delicious apple produced in West Virginia or Washington State. This question proved very difficult to answer. Originally, the respondents were asked to choose between the two apple-producing regions. Many people did make a choice, but indicated to the interviewer that it was a guess. In view of this lack of conviction, later respondents were permitted to answer "don't know" if it was apparent that they could not make a clear-cut choice.

There was a strong tendency for the respondents to answer all parts of the question in like fashion, that is, to check the same apple as superior in all characteristics listed. The West Virginia-produced apple was considered superior to the Washington-produced apple for each characteristic listed (Tables 33-40) by at least 78 per cent of the sample. For all characteristics except texture, sweetness, and size, there was some evidence of dependence between age and response to these questions. Of those who did not indicate West Virginia apples as their preferences, there was a tendency among young respondents to be indecisive while respondents in the 35-44 age group preferred Washington-produced apples.

There was general agreement among the West Virginia homemakers that people would not be willing to pay more for a fresh red delicious apple produced in Washington than the same type produced in West Virginia (Table 41). Only 13 per cent of those interviewed felt that Washington apples could command a higher price — a larger number than would be expected by chance were in the under 25 and 25-34 age levels.

UTILIZATION

Respondents were asked which fruit they preferred for fresh consumption. In general, bananas were the most frequently selected fruit, followed by apples

(Table 42). Younger families (homemaker under 35) preferred bananas over apples by a large margin, while older families (homemaker 55 or older) preferred apples to bananas. Also worth noting was a relatively high response to grapefruit by homemakers in the 45-54 age level.

Most of the respondents (75 per cent) indicated they did not look for a specific brand name when purchasing the fruits they preferred for fresh consumption (Table 43). Of those who did purchase a specific brand name, Chiquita, which is used for bananas, was mentioned most frequently. As was noted previously, there was some confusion as to what constitutes a brand name, with fruit type or variety sometimes used as a brand name.

The range of per capita annual fresh apple consumption was from zero to over 100 pounds (Table 44). In each age category over half the population was accounted for in the first three consumption groups (0-30 pounds). Due to the large number of cells containing zeros, no chi-square test was performed.

In a series of questions respondents were asked if their use of apples for various circumstances had varied over the last 10 years. Almost two-thirds of the respondents indicated that their use of apples for pies, cakes, and other cooked desserts has remained constant over this time period, while very few noted an increase in use (Table 45). The response pattern by age level did vary, with respondents under 45 years showing a trend for constant consumption while those 55 years and older tended to decrease consumption over the 10-year period.

In regard to use of apples for applesauce or other preparations eaten with the main part of the meal, two-thirds of those interviewed said their use has remained constant over the last 10 years (Table 46). Twenty-six per cent had decreased apple use for this purpose, with the decreased consumption pronounced in the 55 years and older age level and rather low among those under 45 years.

The per cent of respondents who increased the quantity of apples eaten fresh (18 per cent) was larger than for the two preceeding uses, with the largest increases in the 25-44 age level (Table 47). In the oldest age group (55 years and older) the trend was for decreased apple consumption. Slightly over half of the respondents have consumed a constant amount of apples over the last 10 years.

Most of the people in this survey indicated that their use of apples for preservation remained constant over the last 10 years (Table 48). A trend toward decreased consumption was noted in the 35-44 years and 55 years and older age categories, while there was some indication that homemakers under 35 years are increasing preservation of apples.

Those residents who indicated an increase or decrease in any of the mentioned uses for apples were asked which factors contributed to their change in consumption. In general, a decrease in family size was the primary reason for the decrease (Table 49). Health reasons and shortage of time for preparation of fresh apples were less popular reasons given. Age did influence the reasons given, with those 55 years and older more inclined to mention a decrease in family size and those under 45 more concerned with lack of time available to prepare apples.

The most frequently mentioned factor contributing to increases in apple use was an increase in family size (Table 50). Health reasons, increased access to apple trees, and changes in tastes and preferences were of minor importance. Respondents under 45 years had a tendency to mention increase in family size, and respondents 55 years and older were more likely to note a change in tastes and preferences as being responsible for increased apple consumption.

The respondents were asked to estimate the per cent of their apple purchases which were used in each of four stated categories: cooked desserts, main dish accompaniments, eating fresh, and preservation. The average per cent used for desserts was 25 or less for all age categories (Table 51). The mode, which was the most frequently mentioned response, was 25 per cent for all categories except one, where it was 10 per cent. Generally, as age increased, the per cent of respondents in each age group who did use fresh apples for cooked desserts increased. The range also increased with age.

The average per cent of apples used for applesauce and other preparations eaten with the main part of the meal was slightly higher for each age level than it was for cooked desserts (Table 52). The ranges varied from 2-50 up to 5-99 although all modes were 25 per cent or less. Again, there was a general trend for per cent to increase as age increased.

It appears that the majority of apples were purchased for eating out of hand. The average per cent in this category was 67 or greater for all age levels, and the mode for each age level was 100 (Table 53). Only 12 respondents out of the 450 homemakers interviewed indicated they did not eat apples out of hand.

Very few homemakers indicated they preserved apples (Table 54). The average per cent of apples used for preservation was under 25 for all age levels and was zero in the youngest age level. As age increased, there was a tendency for the number of homemakers who did preserve apples to increase.

Age did appear to influence the source of apples for apple pie (Table 55). In general, the most frequent response was that fresh apples were used to make apple pie, However, three age levels (under 25, 25-34, and 35-44) showed a higher than expected response for pies bought from the grocery store or bakery. Few respondents indicated they generally made pie from processed apples.

The respondents were split almost equally on the type of applesauce usually served (Table 56). Purchased, canned applesauce received 231 responses and home-prepared applesauce received 210 responses. There was evidence of a preference for purchased applesauce in the under 25 years groups, while those respondents 55 years and older preferred to make their own applesauce.

CONCLUSIONS AND IMPLICATIONS

There is evidence from this study that apples, which used to be considered a seasonal fruit, are becoming a year-around fruit. Increased use of controlled atmosphere storage, which evens out fresh apple supply as well as reducing large price fluctuation throughout the year, should support this trend. The year-around availability of apples is bringing them into competition with seasonal fruits such as peaches and strawberries. In order to increase its share of the fresh fruit market, the apple industry may need to be more aggressive.

Age level of the homemaker often influenced response to questions in the survey. This information could supply researchers with topics for future studies in defining consumer differences which would aid industry in meeting changing consumer tastes and preferences.

A sizeable number of homemakers interviewed could not name the apple variety preferred by their household members, and brand preference was virtually nonexistent. From this it appears that industry education-oriented advertising, explaining prime uses of the various apple varieties, could be useful in combatting the downward trend in fresh apple consumption.

Statistical reports indicate that consumers differentiate between Washington apples and those grown elsewhere, allowing Washington apples to command a premium price. This did not appear to be true of West Virginia consumers, who are generally loyal to their State. The homemakers interviewed overwhelmingly preferred locally-grown red delicious apples to those grown in the state of Washington. They also indicated that they would not pay more for a Washington red delicious apple.

The per cent of fresh apples purchased for eating out of hand was considerably higher than for other uses such as applesauce, desserts, or preservation. Also, the largest increase in fresh apple consumption during the last 10 years was for eating out of hand — over double the increases reported in the other categories. Promotional campaigns presenting apples as a nutritious, non-messy, fresh fruit would probably be more effective than campaigns dealing with uses of apples which require preparation time.

TABLES 1-56

TABLE 1. COMPARISON OF SOCIO-ECONOMIC CHARACTERISTICS BY PLACE OF RESIDENCY

	Population Density[a]			
Socioeconomic Variable	A (N=33)	B (N=240)	C (N=177)	Per Cent of Total Sample (N=450)
		Per Cent		
Age of Homemakers:				
Less than 25	3	8	3	5
25-34	9	17	7	13
35-44	18	20	19	20
45-54	33	20	23	22
55 and over	37	35	48	40
Education of Homemaker:				
Grade School (1-8 years)	36	41	18	31
High School (9-12 years)	46	49	48	48
College	18	7	28	17
Graduate Work	0	3	6	4
Annual Household Income:				
$1,000 - $4,999	39	22	46	36
$5,000 - $9,999	39	32	26	30
$10,000 - $14,999	9	18	16	16
$15,000 - $24,999	6	15	6	10
$25,000 and over	3	6	1	3
No Income Data	3	7	5	5
Size of Household:				
1	6	7	15	10
2	34	29	34	31
3	24	20	19	20
4	15	23	19	21
5	6	10	7	8
6	6	7	4	6
7+	9	5	2	4

[a] Categories may not add to 100 per cent due to rounding.

TABLE 2. HAVE YOU PURCHASED ANY APPLES FOR FRESH CONSUMPTION FOR YOUR FAMILY DURING THE LAST YEAR?[a]

Age (Years)	Response		
	Yes	No	TOTALS[b]
Under 25	23.00[c]	1.00	24.00
	21.65	2.35	24.00
	0.08	0.77	0.86
25-34	50.00	7.00	57.00
	51.43	5.57	57.00
	0.04	0.37	0.40
35-44	84.00	5.00	89.00
	80.30	8.70	89.00
	0.17	1.58	1.75
45-54	91.00	8.00	99.00
	89.32	9.68	99.00
	0.03	0.29	0.32
55 and older	158.00	23.00	181.00
	163.30	17.70	181.00
	0.17	1.59	1.76
TOTALS[b]	406.00	44.00	450.00
	406.00	44.00	450.00
	0.50	4.59	5.09

Total chi-square = 5.09 with 4 D.F.   Prob > chi-square = 0.28

[a] Questions asked to the homemaker during the interviewing are used as table headings throughout this study.

[b] Summation of row and column cell values may not equal totals due to computer rounding.

[c] The top figure in each response category indicates the actual number of homemakers responding, the middle figure indicates the number of expected responses based on statistical tests, and the bottom figure is the amount of the total chi-square value accounted for by that cell. For example in the cell composed of the under 25 years and yes categories, 23.00 is the number of actual homemakers in this income group who purchased apples during the last year, 21.65 is the expected number of yes responses based on the chi-square test, and 0.08 is the cell chi-square and indicates the amount of the total chi-square (5.09) accounted for by this cell.

TABLE 3. DURING THE YEAR DO YOU BUY ABOUT THE SAME AMOUNT OF FRESH APPLES EACH MONTH OR DOES THE AMOUNT PURCHASED VARY FROM ONE MONTH TO ANOTHER?

	Purchase Pattern					
Age (Years)	Same Each Month	Dec., Jan., Feb.	June, July, Aug.	Sept., Oct., Nov.	No Special Months	TOTALS
Under 25	7.00	5.00	3.00	3.00	6.00	24.00
	7.67	5.83	1.44	6.11	2.94	24.00
	0.06	0.12	1.68	1.58	3.17	6.61
25-34	13.00	13.00	5.00	14.00	4.00	49.00
	15.65	11.91	2.95	12.48	6.01	49.00
	0.45	0.10	1.43	0.19	0.67	2.83
35-44	29.00	19.00	6.00	27.00	8.00	89.00
	28.43	21.63	5.36	22.66	10.92	89.00
	0.01	0.32	0.08	0.83	0.78	2.02
45-54	29.00	29.00	5.00	22.00	10.00	95.00
	30.35	23.09	5.72	24.19	11.66	95.00
	0.06	1.51	0.09	0.20	0.24	2.10
55 and older	60.00	39.00	7.00	44.00	25.00	175.00
	55.90	42.53	10.53	44.56	21.47	175.00
	0.30	0.29	1.18	0.01	0.58	2.37
TOTALS	138.00	105.00	26.00	110.00	53.00	432.00
	138.00	105.00	26.00	110.00	53.00	432.00
	0.88	2.35	4.45	2.81	5.44	15.92

Total chi-square = 15.92 with 16 D.F.   Prob > chi-square = 0.46

TABLE 4. WHY DO YOU PURCHASE MORE APPLES DURING THESE MONTHS THAN OTHER MONTHS?[a]

	Reason for Purchase Variation							
Age (Years)	Apples Are Gone Off Their Trees	Less Expensive, Plentiful, in Season	Cooking, Canning	Buy According to Appetite	Holidays	Fresher or Taste Better	Need Fresh Fruit	TOTALS
Under 25	1.00	6.00	0.0	3.00	2.00	1.00	0.0	13.00
	1.47	4.79	1.20	2.45	1.41	0.87	0.82	13.00
	0.15	0.31	1.20	0.12	0.24	0.02	0.82	2.86
25-34	8.00	11.00	0.0	10.00	2.00	0.0	2.00	33.00
	3.73	12.15	3.04	6.21	3.59	2.21	2.07	33.00
	4.90	0.11	3.04	2.31	0.70	2.21	0.00	13.27
35-44	3.00	19.00	4.00	7.00	8.00	4.00	3.00	48.00
	5.42	17.67	4.42	9.04	5.22	3.21	3.01	48.00
	1.08	0.10	0.04	0.46	1.48	0.19	0.00	3.35
45-54	2.00	21.00	9.00	8.00	4.00	2.00	5.00	51.00
	5.76	18.78	4.69	9.60	5.55	3.41	3.20	51.00
	2.46	0.26	3.95	0.27	0.43	0.59	1.01	8.96
55 and older	13.00	31.00	9.00	17.00	10.00	9.00	5.00	94.00
	10.62	34.61	8.65	17.70	10.23	6.29	5.90	94.00
	0.53	0.38	0.01	0.03	0.00	1.16	0.14	2.26
TOTALS	27.00	88.00	22.00	45.00	26.00	16.00	15.00	239.00
	27.00	88.00	22.00	45.00	26.00	16.00	15.00	239.00
	9.12	1.16	8.24	3.19	2.86	4.17	1.97	30.70

Total chi-square = 30.70 with 24 D.F. Prob > chi-square = 0.16

[a] See Table 3 for months referred to.

TABLE 5. WHEN YOU BUY APPLES FOR FRESH CONSUMPTION DO YOU USUALLY BUY RED APPLES, YELLOW APPLES, OR SOME OF BOTH COLORS?

	Apple Color			
Age (Years)	Red	Yellow	Some of Both Colors	TOTALS
Under 25	9.00	3.00	12.00	24.00
	7.76	2.41	13.83	24.00
	0.20	0.15	0.24	0.59
25-34	19.00	6.00	30.00	55.00
	17.79	5.51	31.70	55.00
	0.08	0.04	0.09	0.22
35-44	23.00	8.00	58.00	89.00
	28.79	8.92	51.29	89.00
	1.16	0.09	0.88	2.14
45-54	37.00	8.00	51.00	96.00
	31.05	9.62	55.33	96.00
	1.14	0.27	0.34	1.75
55 and older	54.00	19.00	102.00	175.00
	56.61	17.54	100.85	175.00
	0.12	0.12	0.01	0.25
TOTALS	142.00	44.00	253.00	439.00
	142.00	44.00	253.00	439.00
	2.70	0.68	1.56	4.94

Total chi-square = 4.94 with 8 D.F. Prob > chi-square = 0.76

TABLE 6. WHAT VARIETY OF APPLE DOES YOUR FAMILY PREFER FOR EATING?

	Variety						
Age (Years)	Don't Know	Yellow Delicious	Red Delicious	Rome Beauty	Starks Delicious	Grimes Golden	TOTALS
Under 35	21.00	19.00	29.00	2.00	2.00	2.00	75.00
	19.97	13.17	26.13	3.61	4.04	8.07	75.00
	0.05	2.58	0.31	0.72	1.03	4.57	9.26
35-44	25.00	15.00	28.00	3.00	3.00	4.00	78.00
	20.77	13.70	27.18	3.76	4.20	8.40	78.00
	0.86	0.12	0.02	0.15	0.34	2.30	3.81
45-54	16.00	9.00	31.00	1.00	5.00	9.00	71.00
	18.91	12.47	24.74	3.42	3.82	7.64	71.00
	0.45	0.97	1.58	1.71	0.36	0.24	5.31
55 and older	32.00	19.00	35.00	11.00	9.00	23.00	129.00
	34.35	22.66	44.95	6.21	6.94	13.89	129.00
	0.16	0.59	2.20	3.69	0.61	5.98	13.23
TOTALS	94.00	62.00	123.00	17.00	19.00	38.00	353.00
	94.00	62.00	123.00	17.00	19.00	38.00	353.00
	1.52	4.26	4.13	6.27	2.34	13.09	31.61

Total chi-square = 31.61 with 15 D.F. Prob > chi-square = 0.007

TABLE 7. WHERE DO YOU USUALLY BUY APPLES?

	Place of Purchase					
Age (Years)	Super-market	Produce or Fruit Market	Neighborhood Store	Fruit Farm	Grow Own	TOTALS
Under 25	15.00	3.00	4.00	2.00	0.0	24.00
	12.56	4.33	3.78	2.89	0.44	24.00
	0.48	0.41	0.01	0.27	0.44	1.62
25-34	29.00	7.00	6.00	11.00	1.00	54.00
	28.25	9.75	8.50	6.50	1.00	54.00
	0.02	0.78	0.74	3.12	0.0	4.65
35-44	50.00	17.00	13.00	8.00	1.00	89.00
	46.56	16.07	14.01	10.71	1.65	89.00
	0.25	0.05	0.07	0.69	0.25	1.32
45-54	48.00	20.00	15.00	9.00	3.00	95.00
	49.70	17.15	14.95	11.44	1.76	95.00
	0.06	0.47	0.00	0.52	0.88	1.92
55 and older	84.00	31.00	30.00	22.00	3.00	170.00
	88.94	30.69	26.76	20.46	3.15	170.00
	0.27	0.00	0.39	0.12	0.01	0.79
TOTALS	226.00	78.00	68.00	52.00	8.00	432.00
	226.00	78.00	68.00	52.00	8.00	432.00
	1.08	1.72	1.21	4.71	1.58	10.30

Total chi-square = 10.30 with 16 D.F. Prob $>$ chi-square = 0.85

TABLE 8. HOW ARE THE APPLES YOU BUY USUALLY PACKAGED?

Age (Years)	Packaging					TOTALS
	Clear Plastic Bags	Overwrapped Trays	Loose Apples	Basket or Box	Bag	
Under 25	17.00	1.00	5.00	0.0	1.00	24.00
	13.57	1.43	3.95	4.83	0.22	24.00
	0.87	0.13	0.28	4.83	2.77	8.88
25-34	35.00	2.00	4.00	12.00	1.00	54.00
	30.52	3.21	8.90	10.87	0.49	54.00
	0.66	0.46	2.70	0.12	0.52	4.44
35-44	50.00	7.00	11.00	20.00	1.00	89.00
	50.30	5.30	14.66	17.92	0.81	89.00
	0.00	0.55	0.92	0.24	0.04	1.75
45-54	55.00	6.00	21.00	14.00	0.0	96.00
	54.26	5.71	15.82	19.33	0.88	96.00
	0.01	0.01	1.70	1.47	0.88	4.07
55 and older	90.00	10.00	31.00	42.00	1.00	174.00
	98.35	10.35	28.67	35.04	1.59	174.00
	0.71	0.01	0.19	1.38	0.22	2.51
TOTALS	247.00	26.00	72.00	88.00	4.00	437.00
	247.00	26.00	72.00	88.00	4.00	437.00
	2.25	1.16	5.78	8.04	4.43	21.66

Total chi-square = 21.66 with 16 D.F. Prob > chi-square = 0.15

TABLE 9. WHICH TYPE OF PACKAGE DO YOU PREFER FOR THE SAKE OF CONVENIENCE IN BUYING, HANDLING, AND STORAGE OF APPLES FOR YOUR FAMILY?

	Package Type					
Age (Years)	Plastic Bag	Basket or Box	Loose Apples	No Preference	Overwrapped Tray	TOTALS
Under 25	17.00	1.00	6.00	0.0	0.0	24.00
	13.10	3.54	5.56	0.62	0.18	24.00
	1.16	1.82	0.03	0.62	0.18	4.82
25-34	30.00	5.00	13.00	1.00	3.00	52.00
	28.37	7.67	12.06	1.34	2.56	52.00
	0.09	0.93	0.07	0.09	0.08	1.26
35-44	51.00	15.00	14.00	1.00	6.00	87.00
	47.47	12.84	20.17	2.24	4.28	87.00
	0.26	0.36	1.89	0.69	0.69	3.89
45-54	49.00	14.00	25.00	3.00	4.00	95.00
	51.84	14.02	22.03	2.45	4.67	95.00
	0.16	0.00	0.40	0.12	0.10	0.78
55 and older	86.00	28.00	41.00	6.00	8.00	169.00
	92.22	24.93	39.18	4.35	8.31	169.00
	0.42	0.38	0.08	0.62	0.01	1.51
TOTALS	233.00	63.00	99.00	11.00	21.00	427.00
	233.00	63.00	99.00	11.00	21.00	427.00
	2.09	3.50	2.48	2.14	2.06	12.27

Total chi-square = 12.27 with 16 D.F. Prob > chi-square = 0.72.

TABLE 10. WHY DO YOU PREFER THIS TYPE OF PACKAGE?[a]

Age (Years)	Reason							TOTALS
	Don't Know Don't Care	Can See or Pick What You Get	Keep Better	Easier to Handle or Store	Economy	More Sanitary	Only Way They Come	Amount Is Right	
Under 25	2.00	8.00	2.00	8.00	1.00	0.0	2.00	1.00	24.00
	0.97	8.02	1.66	6.70	2.29	0.46	1.49	2.41	24.00
	1.08	0.00	0.07	0.25	0.73	0.46	0.18	0.82	3.58
25-34	3.00	14.00	1.00	20.00	7.00	0.0	3.00	5.00	53.00
	2.15	17.71	3.67	14.80	5.06	1.01	3.29	5.31	53.00
	0.34	0.78	1.94	1.83	0.74	1.01	0.03	0.02	6.68
35-44	5.00	32.00	4.00	18.00	11.00	1.00	8.00	9.00	88.00
	3.57	29.40	6.09	24.57	8.40	1.68	5.46	8.82	88.00
	0.57	0.23	0.72	1.76	0.80	0.28	1.18	0.00	5.54
45-54	2.00	33.00	5.00	28.00	9.00	3.00	4.00	7.00	91.00
	3.69	30.41	6.30	25.41	8.69	1.74	5.65	9.12	91.00
	0.78	0.22	0.27	0.26	0.01	0.92	0.48	0.49	3.43
55 and older	5.00	53.00	17.00	43.00	12.00	4.00	9.00	20.00	163.00
	6.61	54.46	11.28	45.52	15.56	3.11	10.11	16.34	163.00
	0.39	0.04	2.90	0.14	0.81	0.25	0.12	0.82	5.48
TOTALS	17.00	140.00	29.00	117.00	40.00	8.00	26.00	42.00	419.00
	17.00	140.00	29.00	117.00	40.00	8.00	26.00	42.00	419.00
	3.16	1.27	5.89	4.24	3.10	2.92	1.98	2.16	24.72

Total chi-square = 24.72 with 28 D.F. Prob $>$ chi-square = 0.64

[a] Refers to package types in Table 9.

TABLE 11. CAN YOU USUALLY FIND APPLES PACKAGED IN THE SIZE PACKAGE YOU PREFER FOR YOUR FAMILY?

Age (Years)	Response			TOTALS
	Yes	Packages Are Too Small	Packages Are Too Large	
Under 25	23.00	0.0	0.0	23.00
	21.45	0.38	1.18	23.00
	0.11	0.38	1.18	1.67
25-34	49.00	0.0	3.00	52.00
	48.48	0.85	2.67	52.00
	0.01	0.85	0.04	0.90
35-44	85.00	1.00	3.00	89.00
	82.98	1.45	4.56	89.00
	0.05	0.14	0.54	0.73
45-54	86.00	5.00	3.00	94.00
	87.65	1.53	4.82	94.00
	0.03	7.83	0.69	8.55
55 and older	157.00	1.00	13.00	171.00
	159.44	2.79	8.77	171.00
	0.04	1.15	2.04	3.23
TOTALS	400.00	7.00	22.00	429.00
	400.00	7.00	22.00	429.00
	0.24	10.35	4.49	15.07

Total chi-square = 15.07 with 8 D.F. Prob >chi-square = 0.06.

TABLE 12. WHAT SUGGESTIONS DO YOU HAVE FOR IMPROVING PACKAGING OF APPLES TO AID THE HOMEMAKERS?

Age (Years)	Suggestions					TOTALS
	No Suggestions	Make Smaller Packages	Sell Apples Loose	Eliminate Spoilage Due to Plastic Bags	Put Brand on Package	
Under 25	22	1	0	0	1	24
25-34	42	1	1	4	2	50
35-44	76	2	2	2	2	84
45-54	85	3	5	0	1	94
55 and older	153	13	3	1	1	171
TOTALS	378	20	11	7	7	423

[a] No statistical test was performed on these data due to the large number of observations that fell in the first column.

TABLE 13. DO YOU LOOK FOR A SPECIFIC BRAND NAME WHEN YOU BUY APPLES; IF YES, WHAT BRAND?[a]

Age (Years)	Brand			TOTALS
	No	Gave Variety Rather Than Brand Name	Other	
Under 25	23	1	0	24
25-34	54	0	1	55
35-44	87	0	2	89
45-54	94	2	2	98
55 and older	159	15	2	176
TOTALS	417	18	7	442

[a] No statistical test was performed on these data due to the large number of observations falling in the first column.

TABLE 14. WHICH OF THE FOLLOWING APPLE CHARACTERISTICS DO YOU PREFER?

Age (Years)	Firmness			TOTALS
	Soft	Crisp	Hard	
Under 25	7.00	13.00	4.00	24.00
	3.72	15.75	4.53	24.00
	2.89	0.48	0.06	3.43
25-34	6.00	36.00	14.00	56.00
	8.68	36.75	10.57	56.00
	0.83	0.02	1.11	1.96
35-44	10.00	58.00	21.00	89.00
	13.80	58.40	16.80	89.00
	1.05	0.00	1.05	2.10
45-54	6.00	75.00	18.00	99.00
	15.35	64.96	18.69	99.00
	5.70	1.55	0.03	7.27
55 and older	40.00	110.00	27.00	177.00
	27.44	116.14	33.41	177.00
	5.74	0.32	1.23	7.30
TOTALS	69.00	292.00	84.00	445.00
	69.00	292.00	84.00	445.00
	16.20	2.37	3.48	22.06

Total chi-square = 22.06 with 8 D.F.   Prob > chi-square = 0.005

TABLE 15. WHICH OF THE FOLLOWING APPLE CHARACTERISTICS DO YOU PREFER?

Age (Years)	Juiciness		TOTALS
	Dry	Juicy	
	5.00	262.00	267.00
Under 55	9.04	257.96	267.00
	1.81	0.06	1.87
	10.00	166.00	176.00
55 and older	5.96	170.04	176.00
	2.74	0.10	2.84
	15.00	428.00	443.00
TOTALS	15.00	428.00	443.00
	4.55	0.16	4.70

Total chi-square = 4.70 with 1 D.F.   Prob > chi-square = 0.03

TABLE 16. WHICH OF THE FOLLOWING APPLE CHARACTERISTICS DO YOU PREFER?

Age (Years)	Texture		
	Mealy	Fine-Textured	TOTALS
	6.00	17.00	23.00
Under 25	4.21	18.79	23.00
	0.76	0.17	0.93
	7.00	47.00	54.00
25-34	9.89	44.11	54.00
	0.84	0.19	1.03
	15.00	72.00	87.00
35-44	15.93	71.07	87.00
	0.05	0.01	0.07
	9.00	89.00	98.00
45-54	17.94	80.06	98.00
	4.46	1.00	5.45
	43.00	132.00	175.00
55 and older	32.04	142.96	175.00
	3.75	0.84	4.59
	80.00	357.00	437.00
TOTALS	80.00	357.00	437.00
	9.86	2.21	12.07

Total chi-square = 12.07 with 4 D.F. Prob $>$ chi-square = 0.02

TABLE 17. WHICH OF THE FOLLOWING APPLE CHARACTERISTICS DO YOU PREFER?

Age (Years)	Sweetness			TOTALS
	Sweet	Tart	In Between	
Under 25	19.00	3.00	1.00	23.00
	15.46	6.86	0.68	23.00
	0.81	2.17	0.15	3.14
25-34	45.00	7.00	1.00	53.00
	35.62	15.82	1.57	53.00
	2.47	4.91	0.21	7.59
35-44	66.00	22.00	1.00	89.00
	59.81	26.56	2.64	89.00
	0.64	0.78	1.01	2.44
45-54	60.00	35.00	3.00	98.00
	65.85	29.24	2.90	98.00
	0.52	1.13	0.00	1.66
55 and older	105.00	64.00	7.00	176.00
	118.27	52.52	5.21	176.00
	1.49	2.51	0.61	4.61
TOTALS	295.00	131.00	13.00	439.00
	295.00	131.00	13.00	439.00
	5.94	11.51	1.99	19.44

Total chi-square = 19.44 with 8 D.F.   Prob > chi-square = 0.01

TABLE 18. WHICH OF THE FOLLOWING APPLE CHARACTERISTICS DO YOU PREFER?

	Color				
Age (Years)	Bright or Deep Red	More Red Than Yellow	More Yellow Than Red	No Preference	TOTALS
Under 25	11.00	3.00	8.00	2.00	24.00
	11.84	4.22	6.22	1.73	24.00
	0.06	0.35	0.51	0.04	0.96
25-34	30.00	3.00	19.00	4.00	56.00
	27.62	9.84	14.50	4.04	56.00
	0.20	4.75	1.39	0.00	6.35
35-44	49.00	18.00	18.00	4.00	89.00
	43.90	15.64	23.05	6.41	89.00
	0.59	0.36	1.11	0.91	2.97
45-54	57.00	18.00	17.00	7.00	99.00
	48.83	17.39	25.64	7.14	99.00
	1.37	0.02	2.91	0.00	4.30
55 and older	72.00	36.00	53.00	15.00	176.00
	86.81	30.92	45.59	12.68	176.00
	2.53	0.84	1.21	0.42	4.99
TOTALS	219.00	78.00	115.00	32.00	444.00
	219.00	78.00	115.00	32.00	444.00
	4.75	6.32	7.13	1.38	19.58

Total chi-square = 19.58 with 12 D.F. Prob > chi-square = 0.08

TABLE 19. WHICH OF THE FOLLOWING APPLE CHARACTERISTICS DO YOU PREFER?

Age (Years)	Size			TOTALS
	Small	Medium	Large	
Under 25	1.00	16.00	7.00	24.00
	0.65	19.95	3.41	24.00
	0.19	0.78	3.79	4.77
25-34	2.00	43.00	11.00	56.00
	1.51	46.54	7.95	56.00
	0.16	0.27	1.17	1.60
35-44	3.00	74.00	12.00	89.00
	2.41	73.97	12.63	89.00
	0.15	0.00	0.03	0.18
45-54	1.00	88.00	9.00	98.00
	2.65	81.45	13.91	98.00
	1.03	0.53	1.73	3.28
55 and older	5.00	148.00	24.00	177.00
	4.78	147.10	25.11	177.00
	0.01	0.01	0.05	0.06
TOTALS	12.00	369.00	63.00	444.00
	12.00	369.00	63.00	444.00
	1.53	1.58	6.78	9.89

Total chi-square = 9.89 with 8 D.F. Prob > chi-square = 0.28

TABLE 20. IN YOUR OPINION WHICH VARIETY OF APPLE FITS THIS DESCRIPTION BEST?[a]

Age (Years)	Variety					TOTALS
	Yellow Delicious	Red Delicious	Grimes Golden	Staymen, Winesap	Don't Know	
Under 25	6.00	3.00	0.0	1.00	11.00	21.00
	3.54	8.73	1.38	2.98	4.37	21.00
	1.72	3.76	1.38	1.32	10.08	18.26
25-34	14.00	30.00	2.00	2.00	4.00	52.00
	8.76	21.62	3.42	7.39	10.81	52.00
	3.14	3.25	0.59	3.93	4.29	15.20
35-44	13.00	33.00	2.00	6.00	23.00	77.00
	12.97	32.02	5.07	10.94	16.01	77.00
	0.00	0.03	1.86	2.23	3.05	7.17
45-54	10.00	41.00	3.00	15.00	16.00	85.00
	14.32	35.34	5.59	12.08	17.67	85.00
	1.30	0.91	1.20	0.71	0.16	4.27
55 and older	21.00	51.00	18.00	30.00	25.00	145.00
	24.42	60.29	9.54	20.61	30.14	145.00
	0.48	1.43	7.50	4.28	0.88	14.58
TOTALS	64.00	158.00	25.00	54.00	79.00	380.00
	64.00	158.00	25.00	54.00	79.00	380.00
	6.63	9.38	12.53	12.47	18.46	59.48

Total chi-square = 59.48 with 16 D.F.   Prob $>$ chi-square = 0.0001

[a] Refers to data in Tables 14-19.

TABLE 21. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR BREAKFAST?

Age (Years)	Fruit					TOTALS
	Bananas	Peaches	Apples	Oranges	Grapefruits	
Under 35	23.00	3.00	1.00	15.00	38.00	80.00
	15.05	2.94	4.04	13.76	44.22	80.00
	4.21	0.00	2.28	0.11	0.87	7.48
35-44	20.00	1.00	4.00	14.00	50.00	89.00
	16.74	3.27	4.49	15.31	49.19	89.00
	0.64	1.57	0.05	0.11	0.01	2.39
45-54	19.00	3.00	6.00	12.00	54.00	94.00
	17.68	3.45	4.74	16.17	51.96	94.00
	0.10	0.06	0.33	1.08	0.08	1.65
55 and older	20.00	9.00	11.00	34.00	99.00	173.00
	32.54	6.35	8.73	29.76	95.63	173.00
	4.83	1.11	0.59	0.60	0.12	7.25
TOTALS	82.00	16.00	22.00	75.00	241.00	436.00
	82.00	16.00	22.00	75.00	241.00	436.00
	9.77	2.74	3.26	1.90	1.09	18.76

Total chi-square = 18.76 with 12 D.F.   Prob > chi-square = 0.09

TABLE 22. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR LUNCH?

Age (Years)	Fruit					TOTALS
	Pears	Bananas	Peaches	Apples	Oranges	
Under 25	2.00	5.00	8.00	6.00	2.00	23.00
	2.66	4.61	8.14	6.62	0.98	23.00
	0.16	0.03	0.00	0.06	1.07	1.33
25-34	3.00	10.00	23.00	17.00	3.00	56.00
	6.47	11.23	19.81	16.11	2.38	56.00
	1.86	0.13	0.51	0.05	0.16	2.72
35-44	8.00	14.00	36.00	25.00	2.00	85.00
	9.82	17.04	30.07	24.46	3.61	85.00
	0.34	0.54	1.17	0.01	0.72	2.78
45-54	11.00	22.00	31.00	24.00	4.00	92.00
	10.63	18.44	32.55	26.47	3.91	92.00
	0.01	0.69	0.07	0.23	0.00	1.01
55 and older	25.00	34.00	52.00	50.00	7.00	168.00
	19.42	33.68	59.43	48.34	7.13	168.00
	1.61	0.00	0.93	0.06	0.00	2.60
TOTALS	49.00	85.00	153.00	122.00	18.00	424.00
	49.00	85.00	153.00	122.00	18.00	424.00
	3.98	1.40	2.69	0.41	1.96	10.43

Total chi-square = 10.43 with 16 D.F. Prob > chi-square = 0.84

TABLE 23. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR THE EVENING MEAL?

Age (Years)	Fruit				
	Pears	Bananas	Peaches	Apples	TOTALS
Under 25	5.00 4.96 0.00	3.00 2.96 0.00	8.00 7.41 0.05	5.00 5.67 0.08	21.00 21.00 0.13
25-34	21.00 12.74 5.35	7.00 7.62 0.05	15.00 19.05 0.86	11.00 14.58 0.88	54.00 54.00 7.14
35-44	21.00 18.41 0.36	7.00 11.01 1.46	30.00 27.52 0.22	20.00 21.07 0.05	78.00 78.00 2.10
45-54	17.00 21.95 1.12	15.00 13.12 0.27	31.00 32.81 0.10	30.00 25.12 0.95	93.00 93.00 2.43
55 and older	33.00 38.94 0.91	26.00 23.28 0.32	61.00 58.21 0.13	45.00 44.56 0.00	165.00 165.00 1.36
TOTALS	97.00 97.00 7.74	58.00 58.00 2.09	145.00 145.00 1.37	111.00 111.00 1.97	411.00 411.00 13.16

Total chi-square = 13.16 with 12 D.F. Prob > chi-square = 0.36

TABLE 24. WHICH OF THE FOLLOWING FRUIT WOULD YOU SERVE FOR AN ADULT'S SACK LUNCH?

Age (Years)	Fruit				TOTALS
	Bananas	Peaches	Apples	Oranges	
Under 25	6.00	2.00	15.00	1.00	24.00
	5.63	0.97	15.53	1.88	24.00
	0.02	1.10	0.02	0.41	1.56
25-34	10.00	2.00	41.00	2.00	55.00
	12.90	2.22	35.58	4.30	55.00
	0.65	0.02	0.83	1.23	2.73
35-44	21.00	2.00	57.00	8.00	88.00
	20.64	3.55	56.93	6.88	88.00
	0.01	0.67	0.00	0.18	0.86
45-54	25.00	1.00	54.00	9.00	89.00
	20.88	3.59	57.58	6.96	89.00
	0.81	1.86	0.22	0.60	3.50
55 and older	37.00	10.00	106.00	13.00	166.00
	38.94	6.69	107.39	12.98	166.00
	0.10	1.64	0.02	0.00	1.76
TOTALS	99.00	17.00	273.00	33.00	422.00
	99.00	17.00	273.00	33.00	422.00
	1.59	5.30	1.08	2.42	10.40

Total chi-square = 10.40 with 12 D.F. Prob > chi-square = 0.58

TABLE 25. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR A CHILD'S SACK LUNCH?

	Fruit			
Age (Years)	Bananas	Apples	Oranges	TOTALS
Under 25	9.00	13.00	2.00	24.00
	7.46	14.16	2.39	24.00
	0.32	0.09	0.06	0.48
25-34	16.00	32.00	5.00	53.00
	16.47	31.26	5.27	53.00
	0.01	0.02	0.01	0.04
35-44	20.00	58.00	7.00	85.00
	26.41	50.13	8.46	85.00
	1.55	1.23	0.25	3.04
45-54	25.00	58.00	10.00	93.00
	28.89	54.85	9.25	93.00
	0.52	0.18	0.06	0.77
55 and older	58.00	82.00	17.00	157.00
	48.78	92.60	15.62	157.00
	1.74	1.21	0.12	3.08
TOTALS	128.00	243.00	41.00	412.00
	128.00	243.00	41.00	412.00
	4.16	2.74	0.51	7.41

Total chi-square = 7.41 with 8 D.F. Prob > chi-square = 0.49

TABLE 26. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR A CHILDREN'S PARTY?

Age (Years)	Fruit					TOTALS
	Bananas	Peaches	Apples	Oranges	Grapes	
	8.00	1.00	9.00	3.00	2.00	23.00
Under 25	6.56	1.13	10.80	1.61	2.90	23.00
	0.32	0.01	0.30	1.19	0.28	2.11
	17.00	2.00	23.00	4.00	9.00	55.00
25-34	15.68	2.70	25.83	3.86	6.94	55.00
	0.11	0.18	0.31	0.01	0.61	1.22
	21.00	2.00	48.00	5.00	11.00	87.00
35-44	24.80	4.27	40.86	6.10	10.98	87.00
	0.58	1.21	1.25	0.20	0.00	3.23
	23.00	4.00	51.00	2.00	12.00	92.00
45-54	26.22	4.51	43.21	6.45	11.61	92.00
	0.40	0.06	1.41	3.07	0.01	4.94
	53.00	12.00	70.00	16.00	20.00	171.00
55 and older	48.74	8.39	80.31	11.99	21.57	171.00
	0.37	1.55	1.32	1.34	0.11	4.71
	122.00	21.00	201.00	30.00	54.00	428.00
TOTALS	122.00	21.00	201.00	30.00	54.00	428.00
	1.78	3.01	4.59	5.81	1.02	16.21

Total chi-square = 16.21 with 16 D.F.   Prob > chi-square = 0.44

TABLE 27. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR A TEENAGER'S PARTY?

Age (Years)	Fruit					TOTALS
	Bananas	Peaches	Apples	Oranges	Grapes	
Under 25	4.00	2.00	6.00	6.00	3.00	21.00
	3.42	1.96	9.70	2.01	3.92	21.00
	0.10	0.00	1.41	7.92	0.22	9.65
25-34	7.00	3.00	29.00	3.00	12.00	54.00
	8.78	5.04	24.93	5.17	10.08	54.00
	0.36	0.82	0.66	0.91	0.37	3.13
35-44	15.00	2.00	41.00	8.00	18.00	84.00
	13.67	7.84	38.78	8.04	15.67	84.00
	0.13	4.35	0.13	0.00	0.34	4.95
45-54	16.00	7.00	45.00	7.00	16.00	91.00
	14.80	8.49	42.02	8.71	16.98	91.00
	0.10	0.26	0.21	0.34	0.06	0.96
55 and older	26.00	25.00	72.00	16.00	29.00	168.00
	27.33	15.67	77.57	16.08	31.35	168.00
	0.06	5.55	0.40	0.00	0.18	6.19
TOTALS	68.00	39.00	193.00	40.00	78.00	418.00
	68.00	39.00	193.00	40.00	78.00	418.00
	0.75	10.98	2.81	9.17	1.16	24.88

Total chi-square = 24.88 with 16 D.F. Prob> chi-square = 0.07

TABLE 28. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR AN ADULT'S PARTY?

Age (Years)	Fruit							TOTALS
	Pears	Bananas	Peaches	Apples	Oranges	Grapefruits	Grapes	
Under 25	3.00	3.00	1.00	5.00	1.00	1.00	9.00	23.00
	2.36	2.64	4.22	7.59	1.46	0.62	4.11	23.00
	0.17	0.05	2.45	0.88	0.15	0.24	5.84	9.78
25-34	5.00	5.00	10.00	26.00	5.00	3.00	4.00	52.00
	5.34	5.98	9.54	17.16	3.31	1.40	9.28	52.00
	0.02	0.16	0.02	0.47	0.87	1.83	3.01	6.38
35-44	7.00	13.00	8.00	29.00	9.00	2.00	12.00	80.00
	8.22	9.19	14.67	26.41	5.09	2.15	14.28	80.00
	0.18	1.58	3.03	0.25	3.01	0.01	0.36	8.43
45-54	6.00	7.00	20.00	32.00	1.00	3.00	20.00	89.00
	9.14	10.23	16.32	29.38	5.66	2.39	15.89	89.00
	1.08	1.02	0.83	0.23	3.83	0.15	1.07	8.21
55 and older	21.00	19.00	36.00	49.00	10.00	2.00	28.00	165.00
	16.94	18.96	30.26	54.46	10.49	4.44	29.45	165.00
	0.97	0.00	1.09	0.55	0.02	1.34	0.07	4.04
TOTALS	42.00	47.00	75.00	135.00	26.00	11.00	73.00	409.00
	42.00	47.00	75.00	135.00	26.00	11.00	73.00	409.00
	2.42	2.80	7.43	2.39	7.88	3.57	10.34	36.85

Total chi-square 36.85 with 24 D.F. Prob > chi-square 0.04

TABLE 29. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR A CHILD'S SNACK?

Age (Years)	Fruit						TOTALS
	Pears	Bananas	Peaches	Apples	Oranges	Grapes	
Under 25	0.0	9.00	3.00	5.00	4.00	3.00	24.00
	0.82	8.07	1.53	9.93	2.40	1.25	24.00
	0.82	0.11	1.42	2.45	1.07	2.43	8.29
25-34	5.00	21.00	2.00	21.00	3.00	5.00	57.00
	1.94	19.17	3.63	23.58	5.70	2.98	57.00
	4.81	0.17	0.73	0.28	1.28	1.37	8.64
35-44	1.00	21.00	0.0	51.00	9.00	5.00	87.00
	2.97	29.26	5.54	35.99	8.70	4.55	87.00
	1.30	2.33	5.54	6.26	0.01	0.04	15.49
45-54	1.00	33.00	7.00	39.00	12.00	4.00	96.00
	3.27	32.29	6.11	39.71	9.60	5.02	96.00
	1.58	0.02	0.13	0.01	0.60	0.21	2.54
55 and older	8.00	64.00	16.00	66.00	16.00	6.00	176.00
	6.00	59.20	11.20	72.80	17.60	9.20	176.00
	0.67	0.39	2.06	0.64	0.15	1.11	5.01
TOTALS	15.00	148.00	28.00	182.00	44.00	23.00	440.00
	15.00	148.00	28.00	182.00	44.00	23.00	440.00
	9.17	3.02	9.87	9.64	3.10	5.16	39.97

Total chi-square = 39.97 with 20 D.F.   Prob > chi-square = 0.005

TABLE 30. WHICH OF THE FOLLOWING FRESH FRUIT WOULD YOU SERVE FOR A TEENAGER'S SNACK?

Age (Years)	Fruit						TOTALS
	Pears	Bananas	Peaches	Apples	Oranges	Grapes	
Under 25	0.00	6.00	4.00	10.00	3.00	1.00	24.00
	0.88	5.03	2.10	12.11	2.49	1.38	24.00
	0.88	0.19	1.72	0.37	0.11	0.11	3.37
25-34	6.00	8.00	3.00	27.00	10.00	2.00	56.00
	2.06	11.74	4.90	28.26	5.81	3.23	56.00
	7.50	1.19	0.74	0.06	3.03	0.47	12.98
35-44	1.00	16.00	3.00	50.00	8.00	8.00	86.00
	3.17	18.03	7.53	43.40	8.92	4.95	86.00
	1.49	0.23	2.73	1.00	0.09	1.87	7.41
45-54	2.00	20.00	9.00	50.00	7.00	7.00	95.00
	3.50	19.92	8.32	47.94	9.85	5.47	95.00
	0.64	0.00	0.06	0.09	0.82	0.43	2.04
55 and older	7.00	41.00	19.00	82.00	17.00	7.00	173.00
	6.38	36.27	15.15	87.30	17.94	9.97	173.00
	0.06	0.62	0.98	0.32	0.05	0.88	2.91
TOTALS	16.00	91.00	38.00	219.00	45.00	25.00	434.00
	16.00	91.00	38.00	219.00	45.00	25.00	434.00
	10.58	2.22	6.22	1.84	4.10	3.75	28.71

Total chi-square = 28.71 with 20 D.F. Prob > chi-square = 0.09.

TABLE 31. WHICH OF THE FOLLOWING FRESH FRUITS WOULD YOU SERVE FOR AN ADULT'S SNACK?

Age (Years)	Fruit						TOTALS
	Pears	Bananas	Peaches	Apples	Oranges	Grapes	
Under 25	3.00	5.00	2.00	10.00	1.00	2.00	23.00
	1.53	5.00	3.05	10.11	1.89	1.42	23.00
	1.42	0.00	0.36	0.00	0.42	0.24	2.45
25-34	2.00	6.00	8.00	30.00	5.00	4.00	55.00
	3.65	11.96	7.30	24.16	4.53	3.40	55.00
	0.75	2.97	0.07	1.41	0.05	0.11	5.34
35-44	8.00	17.00	8.00	42.00	8.00	5.00	88.00
	5.84	19.13	11.68	38.66	7.25	5.44	88.00
	0.80	0.24	1.16	0.29	0.08	0.04	2.60
45-54	3.00	24.00	11.00	44.00	8.00	6.00	96.00
	6.37	20.87	12.74	42.18	7.91	5.93	96.00
	1.78	0.47	0.24	0.08	0.00	0.00	2.57
55 and older	13.00	43.00	29.00	66.00	14.00	10.00	175.00
	11.61	38.04	23.23	76.89	14.42	10.81	175.00
	0.17	0.65	1.44	1.54	0.01	0.06	3.86
TOTALS	29.00	95.00	58.00	192.00	36.00	27.00	437.00
	29.00	95.00	58.00	192.00	36.00	27.00	437.00
	4.92	4.32	3.26	3.32	0.56	0.44	16.82

Total chi-square = 16.82 with 20 D.F. Prob > chi-square = 0.66

TABLE 32. HOW DO YOU RATE THE NUTRITIONAL VALUE OF PROCESSED APPLES AS OPPOSED TO FRESH APPLES?

	Nutritional Value		
Age (Years)	Fresh Apples Have More Nutritional Value	The Two Types Are Equally Nutritious	TOTALS
Under 25	17.00	6.00	23.00
	18.05	4.95	23.00
	0.06	0.22	0.28
25-34	46.00	11.00	57.00
	44.72	12.28	57.00
	0.04	0.13	0.17
35-44	68.00	20.00	88.00
	69.04	18.96	88.00
	0.02	0.06	0.07
45-54	80.00	16.00	96.00
	75.32	20.68	96.00
	0.29	1.06	1.35
55 and older	135.00	42.00	177.00
	138.87	38.13	177.00
	0.11	0.39	0.50
TOTALS	346.00	95.00	441.00
	346.00	95.00	441.00
	0.51	1.86	2.37

Total chi-square = 2.37 with 4 D.F. Prob> chi-square = 0.67

TABLE 33. IN YOUR OPINION WHICH OF THE FOLLOWING APPLES HAS THE BEST FLAVOR?

	Preferred Apple			
Age (Years)	Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	TOTALS
Under 25	16.00	1.00	6.00	23.00
	18.01	1.61	3.38	23.00
	0.23	0.23	2.04	2.49
25-34	42.00	5.00	9.00	56.00
	43.86	3.92	8.22	56.00
	0.08	0.30	0.07	0.45
35-44	59.00	12.00	10.00	81.00
	63.44	5.66	11.90	81.00
	0.31	7.09	0.30	7.70
45-54	77.00	4.00	13.00	94.00
	73.62	6.57	13.80	94.00
	0.15	1.01	0.05	1.21
55 and older	142.00	8.00	25.00	175.00
	137.06	12.24	25.70	175.00
	0.18	1.47	0.02	1.66
TOTALS	336.00	30.00	63.00	429.00
	336.00	30.00	63.00	429.00
	0.95	10.09	2.48	13.52

Total chi-square = 13.52 with 8 D.F.   Prob > chi-square = 0.09

TABLE 34. IN YOUR OPINION WHICH OF THE FOLLOWING APPLES HAS THE BEST TEXTURE?

Age (Years)	Preferred Apple: Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	TOTALS
	16.00	1.00	6.00	23.00
Under 25	18.11	1.45	3.44	23.00
	0.25	0.14	1.91	2.29
	42.00	4.00	10.00	56.00
25-34	44.09	3.53	8.37	56.00
	0.10	0.06	0.32	0.48
	59.00	11.00	10.00	80.00
35-44	62.99	5.05	11.96	80.00
	0.25	7.02	0.32	7.60
	77.00	4.00	13.00	94.00
45-54	74.01	5.93	14.06	94.00
	0.12	0.63	0.08	0.83
	143.00	7.00	25.00	175.00
55 and older	137.79	11.04	26.17	175.00
	0.20	1.48	0.05	1.73
	337.00	27.00	64.00	428.00
TOTALS	337.00	27.00	64.00	428.00
	0.92	9.33	2.68	12.92

Total chi-square = 12.92 with 8 D.F.   Prob > chi-square = 0.11

TABLE 35. IN YOUR OPINION WHICH OF THE FOLLOWING APPLES HAS THE BEST TENDERNESS OF SKIN?

Age (Years)	Preferred Apple			TOTALS
	Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	
	16.00	1.00	6.00	23.00
Under 25	18.06	1.50	3.44	23.00
	0.23	0.17	1.91	2.31
	42.00	4.00	10.00	56.00
25-34	43.96	3.66	8.37	56.00
	0.09	0.03	0.32	0.43
	58.00	12.00	10.00	80.00
35-44	62.80	5.23	11.96	80.00
	0.37	8.75	0.32	9.44
	77.00	4.00	13.00	94.00
45-54	73.79	6.15	14.06	94.00
	0.14	0.75	0.08	0.97
	143.00	7.00	25.00	175.00
55 and older	137.38	11.45	26.17	175.00
	0.23	1.73	0.05	2.01
	336.00	28.00	64.00	428.00
TOTALS	336.00	28.00	64.00	428.00
	1.06	11.43	2.68	15.16

Total chi-square = 15.16 with 8 D.F. Prob > chi-square = 0.06

TABLE 36. IN YOUR OPINION WHICH OF THE FOLLOWING APPLES HAS THE BEST SWEETNESS?

	Preferred Apple			
Age (Years)	Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	TOTALS
	16.00	1.00	6.00	23.00
Under 25	18.06	1.50	3.44	23.00
	0.23	0.17	1.91	2.31
	42.00	4.00	10.00	56.00
25-34	43.96	3.66	8.37	56.00
	0.09	0.03	0.32	0.43
	59.00	11.00	10.00	80.00
35-44	62.80	5.23	11.96	80.00
	0.23	6.35	0.32	6.91
	77.00	4.00	13.00	94.00
45-54	73.79	6.15	14.06	94.00
	0.14	0.75	0.08	0.97
	142.00	8.00	25.00	175.00
55 and older	137.38	11.45	26.17	175.00
	0.16	1.04	0.05	1.25
	336.00	28.00	64.00	428.00
TOTALS	336.00	28.00	64.00	428.00
	0.85	8.34	2.68	11.87

Total chi-square = 11.87 with 8 D.F. Prob > chi-square = 0.16

TABLE 37. IN YOUR OPINION WHICH OF THE FOLLOWING APPLES HAS THE BEST COLOR?

	Preferred Apple			
Age (Years)	Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	TOTALS
Under 25	16.00 18.01 0.23	1.00 1.55 0.20	6.00 3.43 1.92	23.00 23.00 2.35
25-34	42.00 43.86 0.08	4.00 3.79 0.01	10.00 8.35 0.32	56.00 56.00 0.42
35-44	59.00 63.44 0.31	12.00 5.48 7.77	10.00 12.08 0.36	81.00 81.00 8.44
45-54	76.00 73.62 0.08	5.00 6.35 0.29	13.00 14.02 0.07	94.00 94.00 0.44
55 and older	143.00 137.06 0.26	7.00 11.83 1.97	25.00 26.11 0.05	175.00 175.00 2.28
TOTALS	336.00 336.00 0.95	29.00 29.00 10.25	64.00 64.00 2.73	429.00 429.00 13.92

Total chi-square = 13.92 with 8 D.F. Prob > chi-square = 0.08

TABLE 38. IN YOUR OPINION WHICH OF THE FOLLOWING APPLES HAS THE BEST SIZE?

	Preferred Apple			
Age (Years)	Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	TOTALS
Under 25	16.00	1.00	6.00	23.00
	17.94	1.67	3.39	23.00
	0.21	0.27	2.00	2.48
25-34	42.00	5.00	9.00	56.00
	43.67	4.07	8.26	56.00
	0.06	0.21	0.07	0.34
35-44	58.00	12.00	10.00	80.00
	62.39	5.81	11.80	80.00
	0.31	6.60	0.28	7.19
45-54	77.00	4.00	13.00	94.00
	73.31	6.82	13.87	94.00
	0.19	1.17	0.05	1.41
55 and older	140.00	9.00	25.00	174.00
	135.70	12.63	25.67	174.00
	0.14	1.04	0.02	1.20
TOTALS	333.00	31.00	63.00	427.00
	333.00	31.00	63.00	427.00
	0.90	9.30	2.42	12.62

Total chi-square = 12.62 with 8 D.F.   Prob > chi-square = 0.12

TABLE 39. IN YOUR OPINION WHICH OF THE FOLLOWING HAS THE BEST JUICINESS?

Age (Years)	Preferred Apple: Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	TOTALS
Under 25	16.00	1.00	6.00	23.00
	18.01	1.55	3.43	23.00
	0.23	0.20	1.92	2.35
25-34	42.00	4.00	10.00	56.00
	43.86	3.79	8.35	56.00
	0.08	0.01	0.32	0.42
35-44	59.00	12.00	10.00	81.00
	63.44	5.48	12.08	81.00
	0.31	7.77	0.36	8.44
45-54	77.00	4.00	13.00	94.00
	73.62	6.35	14.02	94.00
	0.15	0.87	0.07	1.10
55 and older	142.00	8.00	25.00	175.00
	137.06	11.83	26.11	175.00
	0.18	1.24	0.05	1.46
TOTALS	336.00	29.00	64.00	429.00
	336.00	29.00	64.00	429.00
	0.95	10.10	2.73	13.77

Total chi-square = 13.77 with 8 D.F. Prob $>$ chi-square = 0.09

TABLE 40. IN YOUR OPINION WHICH OF THE FOLLOWING APPLES HAS THE BEST NUTRITIONAL VALUE?

	Preferred Apple			
Age (Years)	Red Delicious Produced in West Virginia	Red Delicious Produced in Washington	Don't Know	TOTALS
Under 25	16.00	1.00	6.00	23.00
	18.14	1.37	3.50	23.00
	0.25	0.10	1.79	2.14
25-34	41.00	3.00	10.00	54.00
	42.58	3.21	8.21	54.00
	0.06	0.01	0.39	0.46
35-44	59.00	11.00	10.00	80.00
	63.09	4.75	12.16	80.00
	0.26	8.22	0.38	8.87
45-54	76.00	4.00	13.00	93.00
	73.34	5.52	14.14	93.00
	0.10	0.42	0.09	0.61
55 and older	140.00	6.00	25.00	171.00
	134.85	10.15	26.00	171.00
	0.20	1.70	0.04	1.93
TOTALS	332.00	25.00	64.00	421.00
	332.00	25.00	64.00	421.00
	0.87	10.45	2.70	14.02

Total chi-square = 14.02 with 8 D.F. Prob > chi-square = 0.08

TABLE 41. DO YOU THINK HOMEMAKERS ARE WILLING TO PAY HIGHER PRICES FOR RED DELICIOUS APPLES PRODUCED IN THE STATE OF WASHINGTON THAN FOR THOSE PRODUCED IN WEST VIRGINIA?

	Decision		
Age (Years)	Yes	No	TOTALS
Under 25	4.00	18.00	22.00
	2.94	19.06	22.00
	0.38	0.06	0.44
25-34	13.00	40.00	53.00
	7.08	45.92	53.00
	4.94	0.76	5.70
35-44	8.00	76.00	84.00
	11.23	72.77	84.00
	0.93	0.14	1.07
45-54	8.00	83.00	91.00
	12.16	78.84	91.00
	1.42	0.22	1.64
55 and older	23.00	146.00	169.00
	23.59	146.41	169.00
	0.01	0.00	0.01
TOTALS	56.00	363.00	419.00
	56.00	363.00	419.00
	7.68	1.19	8.87

Total chi-square = 8.87 with 4 D.F. Prob > chi-square = 0.06

TABLE 42. WHICH FRUIT DOES YOUR FAMILY LIKE BEST FOR FRESH CONSUMPTION?

Age (Years)	Fruit						
	Grapefruit	Apples	Bananas	Oranges	Peaches	Pears	TOTALS
Under 35	3.00	12.00	45.00	8.00	5.00	2.00	75.00
	4.46	22.32	28.93	8.93	6.79	3.57	75.00
	0.48	4.77	8.93	0.10	0.47	0.69	15.44
35-44	2.00	31.00	29.00	14.00	4.00	3.00	83.00
	4.94	24.70	32.01	9.88	7.51	3.95	83.00
	1.75	1.61	0.28	1.72	1.64	0.23	7.23
45-54	10.00	24.00	40.00	9.00	8.00	3.00	94.00
	5.60	27.98	36.26	11.19	8.50	4.48	94.00
	3.47	0.57	0.39	0.43	0.03	0.49	5.36
55 and older	10.00	58.00	48.00	19.00	21.00	12.00	168.00
	10.00	50.00	64.80	20.00	15.20	8.00	168.00
	0.00	1.28	4.36	0.05	2.21	2.00	9.90
TOTALS	25.00	125.00	162.00	50.00	38.00	20.00	420.00
	25.00	125.00	162.00	50.00	38.00	20.00	420.00
	5.70	8.22	13.95	2.29	4.35	3.41	37.93

Total chi-square = 37.93 with 15 D.F. Prob > chi-square = 0.001

TABLE 43. WHEN BUYING THIS FRUIT DO YOU LOOK FOR A SPECIFIC BRAND NAME?[a]

Age (Years)	Response					TOTALS
	No	Sunkist	Chiquita	Response Was Not a Brand	Other	
Under 25	17	2	5	0	0	24
25 – 34	40	2	11	2	1	56
35 – 44	71	3	9	3	2	88
45 – 54	69	1	18	5	6	99
55 and older	140	1	14	12	12	179
TOTALS	337	9	57	22	21	446

[a] Refers to fruits mentioned in Table 42.

TABLE 44. ANNUAL PER CAPITA FRESH APPLE CONSUMPTION BY AGE[a]

Per Capita Consumption (lbs.)	Age Under 25	 25-34	 35-44	 45-54	 55 and older	TOTALS
0-10	8	14	19	26	37	104
10 lbs ⩽20	10	15	23	18	31	97
20 lbs ⩽30	2	8	9	18	29	66
30 lbs ⩽40	2	6	21	7	11	47
40 lbs ⩽50	0	3	6	9	21	39
50 lbs ⩽60	0	2	5	3	8	18
60 lbs ⩽70	0	3	2	6	9	20
70 lbs ⩽80	0	1	0	2	3	6
80 lbs ⩽90	0	2	0	1	1	4
90 lbs ⩽100	0	1	0	1	8	10
Greater than 100	2	2	4	8	23	39
TOTALS	24	57	89	99	181	450

[a] Per capita figures in this table were calculated from annual family consumption data and family size reported by homemaker.

TABLE 45. HAS YOUR USE OF APPLES FOR PIES, CAKES, OR OTHER COOKED DESSERTS INCREASED, DECREASED, OR REMAINED CONSTANT OVER THE LAST 10 YEARS?

Age (Years)	Level of Dessert Preparation			TOTALS
	Increased	Decreased	Remained Constant	
Under 25	1.00	1.00	22.00	24.00
	1.56	7.23	15.21	24.00
	0.20	5.37	3.03	8.60
25-34	6.00	5.00	44.00	55.00
	3.58	16.56	34.85	55.00
	1.63	8.07	2.40	12.10
35-44	9.00	12.00	67.00	88.00
	5.73	26.50	55.77	88.00
	1.86	7.93	2.26	12.06
45-54	7.00	31.00	60.00	98.00
	6.39	29.51	62.10	98.00
	0.06	0.08	0.07	0.21
55 and over	6.00	85.00	89.00	180.00
	11.73	54.20	114.07	180.00
	2.80	17.50	5.51	25.81
TOTALS	29.00	134.00	282.00	445.00
	29.00	134.00	282.00	445.00
	6.55	38.94	13.28	58.77

Total chi-square = 58.77 with 8 D.F. Prob > chi-square = 0.0001

TABLE 46. HAS YOUR USE OF APPLES FOR APPLESAUCE OR OTHER PREPARATION EATEN WITH THE MAIN PART OF THE MEAL INCREASED, DECREASED, OR REMAINED CONSTANT OVER THE LAST 10 YEARS?

	Level of Sauce Preparation			
Age (Years)	Increased	Decreased	Remained Constant	TOTALS
Under 25	1.00	1.00	22.00	24.00
	1.46	6.36	16.18	24.00
	0.14	4.52	2.09	6.76
25-34	7.00	4.00	44.00	55.00
	3.34	14.58	37.08	55.00
	4.02	7.68	1.29	12.99
35-44	7.00	11.00	70.00	88.00
	5.34	23.33	59.33	88.00
	0.52	6.52	1.92	8.96
45-54	5.00	28.00	65.00	98.00
	5.95	25.99	66.07	98.00
	0.15	0.16	0.02	0.32
55 and over	7.00	74.00	99.00	180.00
	10.92	47.73	121.35	180.00
	1.41	14.46	4.12	19.98
TOTALS	27.00	118.00	300.00	445.00
	27.00	118.00	300.00	445.00
	6.24	33.34	9.44	49.01

Total chi-square = 49.01 with 8 D.F. Prob > chi-square = 0.0001

TABLE 47. HAS YOUR USE OF APPLES FOR EATING FRESH INCREASED, DECREASED, OR REMAINED CONSTANT OVER THE LAST 10 YEARS?

Age (Years)	Level of Fresh Apple Consumption			
	Increased	Decreased	Remained Constant	TOTALS
Under 25	5.00	1.00	18.00	24.00
	4.42	6.47	13.11	24.00
	0.08	4.63	1.83	6.53
25-34	22.00	3.00	30.00	55.00
	10.13	14.83	30.03	55.00
	13.89	9.44	0.00	23.33
35-44	25.00	5.00	58.00	88.00
	16.22	23.73	48.05	88.00
	4.76	14.78	2.06	21.60
45-54	13.00	28.00	57.00	98.00
	18.06	26.43	53.51	98.00
	1.42	0.09	0.23	1.74
55 and over	17.00	83.00	80.00	180.00
	33.17	48.54	98.29	180.00
	7.88	24.47	3.40	35.75
TOTALS	82.00	120.00	243.00	445.00
	82.00	120.00	243.00	445.00
	28.02	53.41	7.52	88.95

Total chi-square = 88.95 with 8 D.F.   Prob > chi-square = 0.0001

TABLE 48. HAS YOUR USE OF APPLES FOR PRESERVATION INCREASED, DECREASED, OR REMAINED CONSTANT OVER THE LAST 10 YEARS?

	Level of Preservation			
Age (Years)	Increased	Decreased	Remained Constant	TOTALS
	6.00	2.00	71.00	79.00
Under 35	2.84	12.96	63.20	79.00
	3.51	9.27	0.96	13.75
	2.00	3.00	83.00	88.00
35-44	3.16	14.44	70.40	88.00
	0.43	9.06	2.26	11.74
	4.00	15.00	79.00	98.00
45-54	3.52	16.08	78.40	98.00
	0.06	0.07	0.00	0.14
	4.00	53.00	123.00	180.00
55 and over	6.47	29.53	144.00	180.00
	0.94	18.66	3.06	22.66
	16.00	73.00	356.00	445.00
TOTALS	16.00	73.00	356.00	445.00
	4.95	37.06	6.28	48.29

Total chi-square = 48.29 with 6 D.F.   Prob > chi-square = 0.0001

TABLE 49. WHAT FACTORS WERE RESPONSIBLE FOR THE DECREASE REPORTED IN APPLE USE OVER THE LAST 10 YEARS?[a]

Age (Years)	Decrease Factors				TOTALS
	Family Decreased	Health	Shortage of Preparation Time	Decrease in General Food Consumption	
Under 45	6.00	5.00	12.00	1.00	24.00
	14.79	3.91	4.60	0.70	24.00
	5.22	0.31	11.88	0.13	17.54
45-54	24.00	4.00	10.00	1.00	39.00
	24.03	6.35	7.48	1.13	39.00
	0.00	0.87	0.85	0.02	1.73
55 and over	76.00	19.00	11.00	3.00	109.00
	67.17	17.74	20.91	3.17	109.00
	1.16	0.09	4.70	0.01	5.96
TOTALS	106.00	28.00	33.00	5.00	172.00
	106.00	28.00	33.00	5.00	172.00
	6.38	1.26	17.42	0.16	25.23

Total chi-square = 25.23 with 6 D.F. Prob > chi-square = 0.0004

[a] Refers to information in Tables 45-48.

TABLE 50. WHAT FACTORS WERE RESPONSIBLE FOR THE INCREASE REPORTED IN APPLE USE OVER THE LAST 10 YEARS?[a]

	Increase Factors				
Age (Years)	Increase in Family Size	Health	Access to Apple Trees	Change in Tastes and Preferences	TOTALS
Under 45	43.00	5.00	6.00	2.00	56.00
	34.36	7.64	5.73	8.27	56.00
	2.17	0.91	0.01	4.76	7.85
45-54	6.00	3.00	2.00	3.00	14.00
	8.59	1.91	1.43	2.07	14.00
	0.78	0.62	0.23	0.42	2.05
55 and over	5.00	4.00	1.00	8.00	18.00
	11.05	2.45	1.84	2.66	18.00
	3.31	0.97	0.38	10.73	15.39
TOTALS	54.00	12.00	9.00	13.00	88.00
	54.00	12.00	9.00	13.00	88.00
	6.26	2.51	0.62	15.90	25.29

Total chi-square = 25.29 with 6 D.F. Prob $>$ chi-square = 0.0003

[a] Refers to information in Tables 45-48.

TABLE 51. PER CENT OF APPLES PURCHASED USED IN PREPARING PIES, CAKES, OR OTHER COOKED DESSERTS.

Age (Years)	Per Cent of Apples Used for Apple Desserts and Totals					
	Average	Range	Mode	Subtotal	No Apples Used	TOTALS
	(per cent)			(numbers)		
Under 25	16	5-25	25	5	19	24
25-34	21.7	5-50	25	19	38	57
35-44	23.4	5-90	25	34	55	89
45-54	25.0	5-90	10	49	50	99
55 and over	26.8	5-99	25	80	100	180

TABLE 52. PER CENT OF APPLES PURCHASED FOR APPLESAUCE OR OTHER PREPARATIONS EATEN WITH THE MAIN PART OF THE MEAL.

Age (Years)	Per Cent of Apples Used for Applesauce and Totals					
	Average	Range	Mode	Subtotal	No Apples Used	TOTALS
	(per cent)			(numbers)		
Under 25	24.2	2-50	25	6	18	24
25-34	25.3	5-60	10	22	35	57
35-44	28.9	10-75	23	29	60	89
45-54	26.6	5-75	25	44	55	99
55 and over	34.4	5-99	25	95	86	181

TABLE 53. PER CENT OF APPLES PURCHASED USED FOR EATING FRESH

Age (Years)	Per Cent of Apples Used for Eating Fresh and Totals					
	Average	Range	Mode	Subtotal	No Apples Used	TOTALS
		(per cent)			(numbers)	
Under 25	90.6	25-100	100	24	0	24
25-34	80.6	25-100	100	55	2	57
35-44	80.0	10-100	100	89	0	89
45-54	72.5	5-100	100	98	1	99
55 and over	67.3	1-100	100	172	9	181

TABLE 54. PER CENT OF APPLES PURCHASED USED FOR PRESERVATION

Age (Years)	Per Cent of Apples Used for Preservation and Totals					
	Average	Range	Mode	Subtotal	No Apples Used	TOTALS
		(per cent)			(numbers)	
Under 25	0	0	0	0	24	24
25-34	24.3	10-50	None	4	53	57
35-44	18.5	10-33	10	8	81	89
45-54	22.9	10-50	25	14	85	99
55 and over	21.2	10-45	25	23	158	181

TABLE 55. WHEN YOU BUY APPLE PIE IT IS USUALLY ____________

Age (Years)	SOURCE				TOTALS
	Made At Home From Fresh Apples	Made At Home From Processed Apples	Bought From Bakery Or Grocery Store	Never Serve Apple Pie	
Under 25	8.00	4.00	12.00	0.0	24.00
	12.05	3.15	6.83	1.97	24.00
	1.36	0.23	3.92	1.97	7.49
25-34	22.00	12.00	18.00	5.00	57.00
	28.63	7.47	16.21	4.69	57.00
	1.53	2.74	0.20	0.02	4.49
35-44	38.00	11.00	36.00	4.00	89.00
	44.70	11.67	25.32	7.32	89.00
	1.00	0.04	4.51	1.50	7.06
45-54	56.00	13.00	20.00	10.00	99.00
	49.72	12.98	28.16	8.14	99.00
	0.79	0.00	2.36	0.43	3.58
55 and over	102.00	19.00	42.00	18.00	181.00
	90.90	23.73	51.48	14.88	181.00
	1.35	0.94	1.75	0.65	4.70
TOTALS	226.00	59.00	128.00	37.00	450.00
	226.00	59.00	128.00	37.00	450.00
	6.05	3.95	12.74	4.58	27.32

Total chi-square = 27.32 with 12 D.F. Prob > chi-square = 0.007

TABLE 56. WHEN YOU SERVE APPLESAUCE IT IS USUALLY ________

	SOURCE		
Age (Years)	Made at Home From Fresh Apples	Purchased in Canned Form	TOTALS
Under 25	6.00	18.00	24.00
	11.43	12.57	24.00
	2.58	2.34	4.92
25-34	26.00	31.00	57.00
	27.14	29.86	57.00
	0.05	0.04	0.09
35-44	35.00	52.00	87.00
	41.43	45.57	87.00
	1.00	0.91	1.90
45-54	45.00	52.00	97.00
	46.19	50.81	97.00
	0.03	0.03	0.06
55 and over	98.00	78.00	176.00
	83.81	92.19	176.00
	2.40	2.18	4.59
TOTALS	210.00	231.00	441.00
	210.00	231.00	441.00
	6.06	5.51	11.56

Total chi-square = 11.56 with 4 D.F.   Prob > chi-square = 0.02

APPENDIX

Survey Form

. Have you purchased any apples for fresh consumption for your family during the past year?

Yes ______________

No_______________

Don't Know_______

. When you buy apples for fresh consumption do you usually buy red apples, yellow apples, or some of both colors?

Red______________

Yellow ____________

Some of both colors _________

. During the year do you buy about the same amount of fresh apples each month or does the amount purchased vary from one month to another?

Same each month _________

Varies from month to month __________

If the amount varies from month to month, which months do you purchase the most? ____

Why do you purchase more during these months than other months?

____

4. What variety of apple does your family prefer for eating fresh?

Variety___________

Don't Know_______

5. How many apples would you estimate that your family consumes each year for eating as fresh apples (do not include fresh apples not eaten from hand). Record answer in pounds. ______________

6. Which fruit does your family like best for fresh consumption?

Grapefruit _________

Apples ____________

Bananas___________

Oranges ___________

Peaches __________

Grapes ___________

Pears ____________

Other ____________

7. When buying this fruit do you look for a specific brand name?

Yes________ No _____ If yes, what brand __________ Why?______

____

8. In a years time would you estimate that your family consumes more apples or more of the above fruit for fresh consumption?

More apples ____________

More of No. 6 ___________

9. Where do you usually buy apples used for fresh consumption?

Supermarket_______________

Produce or fruit market______

Neighborhood store _________

Fruit farm ________________

Trucker ___________________

Other _____________________

10. How are the apples you buy for fresh consumption usually packaged?

Packaged in clear plastic bags ____________

Packaged in over-wrapped trays ____________

Displayed and sold as loose individual apples ____________

Other________________________ How? ________

11. Which type of package do you prefer for the sake of convenience in buying, handling and storage for your family?

____

Why do you prefer this type of package?_________________________

12. Can you usually find apples for fresh consumption packaged in the size package you prefer for your family?

Yes__________

No___________

If answer is No, please explain. ________________________________

____

13. What suggestions do you have for improving packaging of apples for fresh consumption to aid the housewife?

No suggestions ____________

Suggestions ______________________________

____

4. Do you look for a specific brand name when you buy apples for fresh consumption?

Yes __________

No __________

If yes, what brand? ______________________________________

5. Which of the following characteristics do you prefer in apples purchased for fresh consumption?

☐ soft
☐ crisp
☐ hard

☐ dry
☐ juicy

☐ sweet
☐ tart

☐ mealy
☐ fine textured

☐ bright or deep red
☐ more red than yellow
☐ more yellow than red

☐ small
☐ medium
☐ large

☐ Other characteristics:
Describe: __________
____

6. In your opinion which variety of apple fits this description best?

____

7. What per cent of the apples you purchase fresh are used for:

__________ pies, cakes, or other cooked desserts.
__________ applesauce or other preparations eaten with the main part of the meal.
__________ eating fresh.
__________ preservation.

100 = Total

8. Has your use of fresh apples for __________ increased, decreased, remained about constant over the last 10 years?

__________ pies, cakes, or other cooked desserts.

__________ applesauce or other preparations eaten with the main part of the meal.

__________ eating fresh.

__________ preservation.

19. What factors were responsible for the increase reported in 18 above?

____

____

____

What factors were responsible for the decrease reported in 18 above?

____

____

____

20. In your opinion which of the following apples has the best

	A Fancy Red Delicious Produced in West Virginia	A Fancy Red Deliciou Produced in the State of Washington
Flavor		
Color		
Size		
Nutritional Value		
Texture		
Sweetness		
Tenderness of Skin		
Juiciness		

21. Do you think housewives are willing to pay a higher price for Fancy R Delicious apples produced in the state of Washington than for Fancy Red Delicious apples produced in West Virginia? __________

22. Which of the following fresh fruit would you serve for __________

	Pears	Bananas	Peaches	Apples	Oranges	Grapefruit	Grape
Breakfast							
Lunch							
The Evening Meal							
A Sack Lunch (adult)							
A Sack Lunch (child)							

	Pears	Bananas	Peaches	Apples	Oranges	Grapefruit	Grapes
A Children's Party							
A Teenager's Party							
An Adult Party							
Child's Snack							
Teenager's Snack							
Adult's Snack							

23. How would you rate the nutritional value of processed as opposed to fresh apples?

_________ processed apples have more nutritional value than fresh apples.
_________ fresh apples have more nutritional value than processed apples.
_________ they are equally nutritious.

24. When you serve apple pie it is usually

_________ made at home from fresh apples.
_________ made at home from processed apples.
_________ bought from bakery or grocery store.
_________ never serve (apple pie).

25. When you serve applesauce it is usually

_________ made at home from fresh apples.
_________ purchased in canned form.
_________ never serve applesauce.

26. In order to make studies of this type useful, we group families by size, age, education, and other categories.
How many people live in the household? (List Below) _____________

No.	Relation	Age
1		
2		
3		
4		

5		
6		
7		
8		
9		
10		

27. In which of the following age groups are you? (read)

Under 25	
25 - 34	
35 - 44	
45 - 54	
55 + Over	

28. In which of the following educational groups are you?

Grades	Some Work	Graduated
Grade School 1 - 8		
High School 9 - 12		
College		
Graduate Work		

29. Into which of the following income groups would your household fall?

a. $1,000 to $4,999
b. $5,000 to $9,999
c. $10,000 to $14,999
d. $15,000 to $24,999
e. $25,000 and over

30. What is your husband's occupation? ______________________________